RESPONSE TO COMMENTS
DRAFT TMDL REPORT FOR THE THREE BAYS SYSTEM
(Report Dated December 28, 2006)

Paul Niedzwiecki, Assistant Town Manager, Barnstable

Comment (1): Who is responsible for coordinating, planning, and implementation when the watershed is located in more than one town?
Response: MassDEP feels it is the responsibility of all towns involved, possibly assisted by MassDEP or other agencies within the MEP.

Comment (2): Who will set restoration goals for each town and/or sub-basin when more than one town is involved?
Response: The restoration goals within the TMDLs are the target threshold N concentrations at the sentinel stations. These have been set in the Tech Report and reiterated in the TMDL document. How this goal is met is up to the towns involved, again possibly assisted by MassDEP or other agencies within MEP. We encourage the Towns to work together to find the most cost effective options to meet the TMDL goals.

Comment (3): Who will be responsible for and how will monitoring for compliance be determined? The parameters for mid-tide sampling, procedures, protocols, and the final criteria for determining compliance must be worked out in advance. Will DEP develop a template that the towns' can use as a "back bone" to frame their individual monitoring plans?
Response: **The Department is of the opinion that there are two forms of monitoring that are useful to determine progress towards achieving compliance with the TMDL. They include 1) tracking implementation progress as approved in the Town CWMP plan and 2) monitoring ambient water quality conditions at the sentinel stations identified in the MEP Technical Report.**

As you are aware the CWMP will evaluate various options to achieve the goals set out in the TMDL and Technical Report. It will also make a final recommendation based on existing or additional modeling runs, set out required activities, and identify a schedule to achieve the most cost effective solution that will result in compliance with the TMDL. Once approved by the Department tracking progress on the agreed upon plan will, in effect, also be tracking progress towards water quality improvements in conformance with the TMDL.

Relative to water quality, the Department believes that an ambient monitoring program, much reduced from the data collection activities needed to properly assess conditions and to populate the model, will be important to determine actual compliance with water quality standards. Although the TMDL load values are not fixed, the target threshold nitrogen concentrations at the primary and sentinel stations are fixed. In addition, there are target threshold N concentrations that are provided for many other non-sentinel locations in subembayments to protect nearshore benthic habitat. These are the water quality targets, and a monitoring program should encompass these stations at a minimum. Through discussions amongst the MEP it is generally agreed that existing monitoring programs, which were designed to thoroughly assess conditions and populate water quality models, could be substantially reduced for compliance monitoring purposes. Although more specific details need to be developed the Department's current thinking is that about half the current effort (using the same data collection procedures) would be sufficient to monitor compliance over time and to observe trends in water quality changes. In addition, the benthic habitat and communities would require periodic monitoring on a frequency of about every 3-5 years. Finally, in addition to the above, existing monitoring conducted by MassDEP for eelgrass should continue into the future to observe any

changes that may occur to eelgrass populations as a result of restoration efforts. It should be noted that the Department recognizes that any effort will be a financial burden to implement and as such we are seeking ways to help fund future monitoring activities.

The MEP will continue working with the Towns to develop and refine monitoring plans that remain consistent with the goals of the TMDL. It must be recognized however that development and implementation of a monitoring plan will take some time but it is more important at this point to focus efforts on reducing existing watershed loads to achieve water quality goals.

Comment (4): How was the sentinel station chosen? Will additional stations need to be developed around the sentinel station?
Response: The rationale for picking the sentinel station is clearly discussed in Section VIII.2 Threshold Nitrogen Concentrations of the accompanying Technical Report. This section also discusses using "secondary infaunal check stations" as additional stations that are developed around the sentinel station.

Comment (5): Who will conduct benthic infauna/eel grass sampling at the sentinel station, and on what timeline? What are the levels of change over time that will show a positive effect?
Response: the MassDEP eel grass mapping program will monitor Eel grass. In most cases MassDEP believes that the (current) 5 year mapping intervals will show a gradual progression in eelgrass reestablishment from the cleaner water areas (near the inlet to Nantucket Sound), or from areas where it has been transplanted, back into to the more inland areas of the estuary where the historical N concentration and load are higher.

Comment (6): If restoration goals (eelgrass/benthic infauna) are not achieved upon meeting the sentinel station water column nitrogen target how will modified target(s) to be developed? Who will be responsible for development of modified targets?
Response: If target concentrations are met and restoration goals are not, it will be the MassDEP's responsibility to revise the TMDL and modify the targets as appropriate. During this process the habitat substrate should be evaluated for suitability and the optical properties of the water column should be evaluated to determine if there is adequate sunlight penetration. It should also be noted that the opposite condition could be observed (restoration goals are met, but not the nitrogen concentration. Either way it would be up to the MassDEP to reevaluate the TMDL.

Comment (7): How much access will towns have to the MEP Linked Embayment-Watershed model for alternative evaluations as part of implementation planning?
Response: MassDEP continues in its efforts to make the model available to the towns to conduct alternative analysis if they choose and in fact has contracted for services to develop the needed protocols for this to happen. In the meantime SMAST is committed to providing additional model runs to assist the towns. Furthermore, a sensitivity analysis was conducted as a first step of the MEP process. This is available at: http://mass.gov/dep/water/resources/esttmdls.htm.

Comment (8): Is the State looking at an Anti-degradation Policy at the watershed level?
Response: MassDEP is currently developing an anti-degradation strategy, which would be applied at the watershed level. It is not finalized at the time of this writing.

Comment (9): What are DEPs expectations of a timeline for the development of implementation plans, and what is an expected timeline for implementation?
Response: Specific timelines cannot be determined until a recommended plan has been developed. The MassDEP requests that all towns work together as soon as possible to develop a recommended plan and that the towns involved make reasonable progress in a reasonable amount of time.

Comment (10): Can a pilot implementation plan, with monitoring plan, be developed using a Cape Cod embayment(s) that involves more than one town?
Response: MassDEP does not see any problem with this. Progress toward implementation is progress.

Comment (11): For sections of communities that will have extended implementation schedules due to phased implementation is a community expected to implement interim measures, i.e. requiring septic upgrades to IA, until the final solution (i.e. sewers) is implemented to meet the TMDL?
Response: **Communities may want to consider non-structural interim measures such as the use of escrow accounts established under local or state consent orders to allow interim repairs while establishing a funding mechanism for appropriate wastewater solutions once the CWMP is completed.**

Comment (12): How will physical changes (resulting from storms) in the embayment outlets be handled? The sentinel station is located in Cotuit Narrows. During dredging of Cotuit Lower Bay the flow regime increased from North Bay to Cotuit Bay, this resulted in elevated bacterial levels moving south resulting in a shellfish closure line in North Bay being moved into Cotuit Narrows.
Response: MassDEP recognizes that the inlet is subject to dynamic processes and that maintaining the current configuration may not be feasible. If the inlet migrates, then additional modeling will be required to determine appropriate scenarios necessary to achieve the target threshold N concentrations.

Comment (13): What sources of funding will be available for implementation with an increasing number of towns seeking limited funding?
Response: The current list of funding sources has already been discussed in the Reasonable Assurances section of the TMDL document. No additional sources have been identified at this time.

Comment (14): The Town appreciates the opportunity to review the TMDL Report, and looks forward to working with DEP, the Towns of Mashpee and Sandwich, and others to improve the water quality within the entire Three Bay system. We look forward to working with DEP to address on-going questions concerning permitting, compliance, "adaptive management" and appropriate timelines.
Response: MassDEP also looks forward to the process that leads us to implementation.

Thomas C. Cambareri, Water Resources Program Manager, Cape Cod Commission

Comment (15): Since Barnstable, Sandwich, and Mashpee share the Three Bays watershed, a CWMP would have to address impacts from all three towns. Does DEP anticipate altering CWMP guidance to require one town to be a "lead" town for TMDL implementation?
Response: MassDEP will not designate a specific lead community, however it does appear at this time that Barnstable is assuming the majority of the responsibility for the CWMP in this embayment system.

Comment (16): In order to begin the MEP analysis of an estuary, three years worth of water quality data are necessary. DEP has offered to continue to provide eelgrass data through the state's existing monitoring program, but it is unclear what form benthic monitoring will be. Will DEP provide guidance on the monitoring requirements in order to show TMDL compliance? Will the monitoring be a town responsibility or will DEP be responsible? What is the timeline for the release of applicable monitoring guidance?
Response: Please see response to Comment (3) above.

Comment (17): Will additional state funding, either for monitoring and/or planning, be made available to communities that have final TMDLs to assist them with implementation?

Response: Towns that are addressing impairments identified in an approved TMDL receive increased priority points in the SRF Program. Presently no other funding is available, however MassDEP has requested additional funding under the Environmental Bond to support ongoing monitoring activities.

Comment (18): The "Reasonable Assurances" section of the TMDL states that the daily loads "will not be used as an enforcement tool." As the daily loads cited in the TMDL are one example of how a community might meet the water quality thresholds, these loads could be used as an enforcement tool by a town or the region, especially in an interim period prior to a completed CWMP. Perhaps the more correct statement is that the daily loads will not be used "by DEP" as an enforcement tool.
Response: The suggested correction has been made in this and all other pending TMDL documents.

Comment (19): As currently stated, DEP will be implementing TMDL compliance through the Groundwater Discharge Permit program (for flows greater than 10,000 gpd) and through review of CWMPs. Given that most of Cape Cod relies on septic systems as the primary means of wastewater treatment, this means that most interim activities prior to the completion of a CWMP will continue to be the responsibility of Boards of Health. Will DEP be developing guidance to assist Boards of Health with issues to consider prior to the completion of a CWMP for estuaries with documented water quality problems?
Response: At this time MassDEP is not developing guidance to assist Boards of Health with issues to consider prior to the completion of a CWMP for estuaries with documented water quality problems. MassDEP however believes this is worth further discussion. MassDEP has however supported the concept of escrow accounts established under local or state consent orders to help address difficult Title 5 issues and will continue to support such initiatives.

Comment (20): Table 5 of the TMDL lists the threshold loads for various portions of the Three Bays system. These portions do not all agree with the identified subwatersheds identified in the MEP Technical Report. Please revise the TMDL to be congruent with the Technical Report; this will make implementation discussions easier. Also please include a watershed map to help show the towns involved and the interaction of the whole system, watershed and estuary.
Response: Most of the differences between Table 5 of the TMDL document and the similar presentation of that data in the Technical Report (Table ES-1) is centered on benthic flux. The Technical Report uses the benthic flux (both positive and negative) and the TMDL document only uses the positive. There are two reasons MassDEP is not acknowledging this "negative" input. First, MassDEP feels the negative benthic flux is somewhat misleading in that as the load to the sediments decreases the negative benthic flux value will decrease (be closer to zero) thus meaning more of the load will have to be reduced from that subwatershed. This may be misleading when towns are trying to reduce the nitrogen concentration to the target threshold nitrogen concentration at a given sentinel station. The second reason has to due with the water quality conditions under which benthic flux is negative. In most cases negative benthic flux is a result of denitrification. This usually occurs at very low dissolved oxygen levels to anoxic conditions. These conditions would in most cases not support water quality standards in the overlying waters. As a result the TMDL does not provide a "credit" in the form of a negative flux. Such an approach also provides for an additional margin of safety. Table 5 of the TMDL document does however reflect the data provided in Tables VII-2 through VII-4 in the technical report. The commenter is referred to those tables for additional information.

A simplified watershed map showing the watershed boundary, subwatershed boundaries, waterbodies, and town boundaries has been included in this and all other pending TMDL documents. The Pleasant Bay draft (and final) nutrient TMDL has the more complex watershed map from the Technical Report already included in it.

Roger Parmenter

Comment (21): I was most pleased with the presentation given Feb. 25 at the Barnstable Town Hall. Reports ought to show the problem, how it was found and how to fix or repair it. And so. I have one exception item. There can be no doubt that sewering is the way to do the best job. Be it a large or small cluster plants. This should have been included or in addition to reducing the excess Nitrogen in the ground water as given in the report. In fact I believe all Residential and Commercial Septic Systems within 1000 to 3000 feet of tidal water, wetlands, ponds and lakes countywide should be removed and sewering put in to operation as soon as possible.
Response: MassDEP agrees that sewering will play a major role in achieving the TMDL values and the target threshold nitrogen concentrations at the sentinel stations. The Towns however will evaluate the most cost effective options for achieving the TMDL goals through the CWMP process.

Richard P. Ossen, President, Barnstable Association for Recreational Shellfishing (BARS)

Comment (22): Several members of our organization attended the January 24th public hearing where TMDL for Three Bays Estuary was discussed. We have been, and continue to be seriously concerned about the degradation of shellfish habitat caused in large part by the excessive amount of nitrogen that has been introduced into this important shellfish harvest area. Parts of The Three Bays Estuary have been permanently closed to shellfishing and other areas are closed during warm weather months when the nitrogen counts are highest. It is time to correct this problem. Our organization supports the work of the state DEP to determine the TMDL as an important first step towards restoration of Cotuit Bay, West Bay and North Bay. Many of our members volunteer their time to help the Town of Barnstable DNR with water quality testing, propogation(sic) of seed oysters and quahogs and moving contaminated shellfish to approved relay areas. We have an active advocacy committee that critically evaluates dock and pier applications that would have a long-term negative effect on our propogation(sic) and harvesting areas and speaks out against those proposed sites at Conservation Commission hearings. We hold monthly membership meetings and invite speakers who are experts in their field to address the many environmental issues facing our town waters. Our speaker tonight is from the County of Barnstable Health Department and his subject is nitrides and septic systems and their effect on eel grass and other vegetation in our coastal waters.
Many of our 200 members stand ready to help out in any way we can to move your project along. We understand that it will be a long process and the solution will be expensive, requiring funding from every level-federal, state and local-but the longer we wait, the more money it will take.
Please visit our website, www.shellfishing.org for more information about BARS, and feel free to contact me as well as Tom Marcotti or Kris Clark at our Department of Natural Resources.
Response: MassDEP thanks you for both your past and future support and assistance.